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IN THE UNITED STATES

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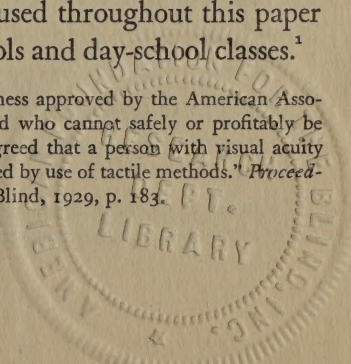
ENROLLMENT OF BLIND PUPILS IN THE UNITED STATES

Berthold Lowenfeld and Evelyn C. McKay

It has long been recognized that the number of pupils enrolled in schools and classes for the blind, in proportion to the general population, varies from State to State. The extent of such variation, however, and its underlying causes have never been subjected to statistical analysis. Through presentation and interpretation of available data, this paper will attempt to set forth the facts regarding variation of blind-pupil enrollment in different parts of the United States; to indicate some of the factors involved; to trace and evaluate these factors; and to develop statistical criteria for future studies.

Before undertaking to discuss the data presented, it should probably be explained that, because of the comparatively small number of blind children in the total population, the provision of special educational facilities for them in their home communities is seldom practicable. The majority of blind children, therefore, are educated in residential schools, either maintained by the State or receiving State aid. In a few large cities, special classes for the blind (known as "braille" or "day-school" classes) are maintained in the public schools. The term "blind enrollment" used throughout this paper includes pupils of both residential schools and day-school classes.¹

¹ For educational purposes, the definition of blindness approved by the American Association of Workers for the Blind is "a person is blind who cannot safely or profitably be trained in the manner of the seeing. It is generally agreed that a person with visual acuity in the better eye of less than 20/200 should be instructed by use of tactile methods." *Proceedings* of the American Association of Workers for the Blind, 1929, p. 183.



It should also be pointed out that the children referred to in this study as blind are those who receive their education mainly by tactual instead of visual methods—for instance, by reading embossed print with their fingers, by using embossed maps, etc. In a few residential schools so-called “sight conservation” or “sight-saving” classes are provided for children who, though suffering from visual defects, are able to learn to a certain extent from specially adapted visual material. Neither these children nor children in sight-conservation classes in public schools are included in blind enrollment.

Particular attention will be given in this study to the group of children in schools and classes for the blind who, on the basis of their visual efficiency, should actually not be educated by tactual methods. These children are frequently sent to schools for the blind for reasons other than defective vision, although they may be able to attend sight-saving classes or even regular classes in public schools. Their education by “blind methods” in residential schools seems, therefore, to be unjustifiable.

For the purposes of this study the total enrollment of children in public, private, and parochial schools, both elementary and secondary, is referred to as “general enrollment.” Comparison of blind enrollment with general enrollment by States and regions not only reveals certain statistically significant data but also offers an opportunity for interpretation of variations in rates of enrollment.

While the available data yield a rate of blind enrollment to general enrollment as it actually exists, interpretation of the data in the light of underlying causes will lead to a “corrected” rate of blind enrollment which would meet the standards set by our present knowledge in the fields of ophthalmology and education.

The study follows the grouping of States into regional divisions as outlined in Odum's *Southern Regions of the United States*.²

Statistics published by the United States Office of Education fur-

² Howard W. Odum, *Southern Regions of the United States* (Chapel Hill, N. C.: University of North Carolina Press, 1936), pp. 5-11.

nish the data on the enrollment of pupils in public schools³ and in private and parochial schools.⁴ Figures for the public and nonpublic schools were added, State by State, and are presented in Table I⁵ under the heading "General Enrollment, 1938."

Data on enrollment of pupils in residential schools and day-school classes for the blind⁶ were compiled by the American Foundation for the Blind and represent the number of pupils as of January 1, 1938.⁷ Supplementary information was secured by direct correspondence with the responsible authorities. Of the total blind enrollment of 6,222 reported for 1938, 5,713 (92 per cent) were in residential schools for the blind, and 509 (8 per cent) were attending classes for the blind in the public schools.

Figures for general population in the age group 5-19 years and for age distribution of the population for each State are taken from the 1940 census of population.⁸ The total population reported in this age group was 34,764,080.

Table I presents a comparison of blind enrollment and general enrollment by regions. Since the resulting rate varies greatly from State to State and from region to region, figures on the general population of school age (5-19 years) have been included, in order to indicate the proportion of the school-age population actually attending schools. The percentage of this school-age population in school varies from 73.3 in Louisiana to 92.0 in Oklahoma. Regionally, New England, Middle Atlantic, Middlewest, Northwest, and Far West show no great differences in this respect, ranging

³ Biennial Survey of Education in the United States: *Statistics of State School Systems*, 1937-38. Bulletin 1940, No. 2, Ch. ii; Table III, p. 9. Federal Security Agency (Washington, D. C.: United States Office of Education).

⁴ *Ibid.*, Table 62, pp. 169-170.

⁵ See page 375 for tables.

⁶ Ruth Elizabeth Wilcox and Helga Lende, compilers, *Directory of Activities for the Blind in the United States and Canada* (3d ed., New York: American Foundation for the Blind, 1938).

⁷ The present study refers to the year 1938, because this was the most recent year for which all comparable data were available.

⁸ *Sixteenth Census of the United States: 1940*. "Population Characteristics" (Washington, D. C.: United States Department of Commerce, Bureau of the Census).

from 83.8 to 87.4 per cent. The southeast and southwest regions however, show a notably smaller proportion enrolled in schools, 76.1 and 80.0 per cent, respectively.

It might have been expected that the factors that are responsible for this variation in percentage of enrollment of school-age population would have a similar effect on the rates of blind enrollment, but this is not the case. As the figures for the States show, the variations in the rate of blind enrollment to general enrollment bear no apparent relation to the variations in proportional enrollment of school-age population. The question therefore arises as to what are the underlying causes for the differences in the rates of blind enrollment per 100,000 general enrollment from State to State and from region to region. In general, these differences seem to follow a geographic pattern. Again, New England, Middle Atlantic, Middle-west, Northwest, and Far West show no striking variation, the regional rates ranging from 18.9 to 20.5. The two southern regions, Southeast and Southwest, however, have much higher rates, 25.3 and 30.0, respectively. There is a variation of rates from State to State in the seven regions—with the following differences: in New England, New Hampshire (14.2) has the lowest and Rhode Island (24.1) the highest rate; in the Middle Atlantic, New Jersey (15.9) shows the lowest, while the rates of Maryland (25.2) and West Virginia (28.5), the two most southern States in this region, are much higher; in the Southeast, Mississippi (15.5) and Georgia (17.7) show very low rates, contrary to the general trend in this region, while North Carolina (33.4) has a very high rate; in the Middle region, Missouri (13.0) has the lowest and Iowa (32.5) has the highest rate; in the Southwest, Oklahoma (24.5) has the lowest and Arizona (38.6) and New Mexico (65.5) have the highest rates; in the Northwest, Nebraska (17.5) and Colorado (17.6) are low and North Dakota (24.9) and South Dakota (25.4) are higher in their rates; the Far West shows California (14.6) with the lowest and Oregon (43.9) with the highest rate in this region. Such striking

difference in rates of blind enrollment per 100,000 general enrollment should receive careful consideration by the State and local authorities concerned and lead to some action on their part. A further study of the same subject, presenting the figures for some later year, will be prepared, which should be indicative of trends.

There are various factors that may be responsible for the wide variations in rate discussed above, among them the following:

1. A genuine difference in incidence of blindness among children
2. The degree of effectiveness of case-finding procedures
3. Social or economic factors that work in favor of or against
 - a) the extent to which educational facilities for blind children are provided, and
 - b) the extent to which they are enabled to utilize such facilities
4. Differences in standards of admission to schools and classes for the blind, particularly in regard to the definition of blindness

The first three factors can be evaluated only locally by persons who have a thorough knowledge of conditions prevailing in the area concerned. The last mentioned factor lends itself more readily to further analysis, because reliable data on degree of visual handicap were available on blind enrollment in 1938.

Through the efforts of the Committee on Statistics of the Blind, sponsored jointly by the American Foundation for the Blind and the National Society for the Prevention of Blindness, records for the school year 1937-1938 were available on the degree of vision of 3,993 children in 39 schools and classes for the blind.⁹ It is generally considered that children with visual acuity of less than 20/200 (Snellen measurements) in the better eye with correcting lenses should be educated in schools or classes for the blind. Children with visual acuity between 20/200 and 20/70 belong in sight-conservation classes and children with vision better than 20/70 should in general—as far as their vision is concerned—be able to participate in regular

⁹ C. Edith Kerby and Evelyn C. McKay, "Eye Conditions Among Pupils in Schools for the Blind, 1937-38," *Outlook for the Blind*, xxxiii (December 1939), pp. 140-144.

public-school instruction. Children with visual acuity of 20/200 are borderline cases and their educational placement depends on the adjustment and intelligence of the individual child. In order to make the findings of this paper conservative, these borderline children have been considered as belonging to the group for whom tactual education is appropriate.

Table II presents, besides the blind enrollment and the rate of blind enrollment per 100,000 general enrollment, the total number of cases for which amount of vision was reported and the number of pupils whose vision was better than 20/200. Pupils belonging to this latter group should, because of their high degree of vision, not be educated in schools or classes for the blind. In addition, Table II gives the regional percentage figures for this high-vision group as compared with the total number of cases for which degree of vision is reported. The number of pupils in the group with vision better than 20/200 shows, as far as data were available, great differences from State to State reflecting clearly different standards in the admission policies of schools and classes for the blind. The comparatively high rate of blind enrollment per 100,000 general enrollment in certain States coincides with, and may find an explanation in, the large number of pupils in the high-vision group. The lack of data on distribution by degree of vision for some States with particularly high rates of blind enrollment makes definite conclusions difficult.

Table III, "Actual and 'Corrected' Blind Enrollment by Regions," is essentially derived from Table II. The percentages available show that in two regions, Southwest and Far West, the coverage could not be considered representative, being only 20.2 and 25.8 per cent, respectively. In the five other regions, the proportion of cases covered by eye records was sufficiently large (52.2 to 100.0 per cent) to be regarded as a representative sample and to justify the drawing of conclusions. The percentages of pupils with too much vision to belong in schools and classes for the blind are given in the second column. New England with 5.1 per cent and the Northwest with

17.4 per cent are the extremes. The next column gives the total blind enrollment for the respective regions. The "corrected" blind enrollment is arrived at by applying the percentage of high-vision pupils, as determined by the sample, to the total enrollment and subtracting the resulting number from the total enrollment. We then find that, instead of the actual blind enrollment of 6,222 pupils, the "corrected" blind enrollment would be only 5,569, which represents a reduction of 10.5 per cent in the number of pupils in the United States for whom education in schools or classes for the blind need be provided. The importance of such a reduction, from the standpoint of school administration, as well as that of financial expenditure, needs no further emphasis. Most serious of all considerations, however, is the effect upon these seeing children who are placed in an environment and educated by methods that by their very nature are entirely unsuited to the children's needs.

As a matter of further clarification, Table III presents the actual rate and the "corrected" rate of blind enrollment per 100,000 general enrollment. The "corrected" rate still follows a geographic pattern. New England, Middle Atlantic, and Northwest vary only from 17.0 to 18.1. The Southeast, however, shows a "corrected" rate of 22.5, which seems to point to a genuinely higher incidence of blindness in that area unless other explanations can be found. As pointed out previously, data for the Southwest which might support this assumption were unfortunately not available for 1938. The high rate of blind enrollment in this region supports our assumption.

Turning finally to the rate of blind enrollment per 100,000 general enrollment for the United States as a whole, a word might be added to explain the reason for using a rate of blind enrollment per 100,000 general enrollment rather than per 100,000 school-age population. Blind enrollment includes all pupils in residential schools and public-school classes for the blind without regard to age limit. (About 10 per cent of the blind enrollment is above nineteen years of age.) Furthermore, it does not include children who may be edu-

cated elsewhere or left without education. The figures for general enrollment have these same characteristics, while those given for school population (age 5-19 years) are based on a comprehensive census and represent an exactly defined measure of a certain age group of the population. A comparison of blind enrollment with general enrollment seemed therefore preferable.

Kerby states in her report for 1939-1940: "It is estimated that approximately three-fourths of the entire group receiving special education as blind persons in the elementary and secondary grades are included. . . ." and "The estimates that we have computed show a rate of 17.8 blind per 100,000 of the population of school age."¹⁰ Our material, using complete figures for blind enrollment and the population of school age as determined in the 1940 census, results in a rate of 17.9 per 100,000 of the school-age population for the United States as a whole, confirming Kerby's estimate.

On the basis of the information submitted in this study we find that, in 1938, for every 100,000 pupils enrolled in public schools, 21.7 pupils were enrolled in schools and classes for the blind. If all pupils with vision better than 20/200 had been properly placed in public schools only 19.4 pupils for each 100,000 of the general enrollment would have been attending special schools for the blind. This "corrected" rate of blind enrollment will be realized, when children whose vision makes tactual education unnecessary are provided for adequately and more suitably outside the schools and classes for the blind. This is an aim for which all educational administrators, whether in the general or the special field, should strive.

¹⁰ C. Edith Kerby, "Eye Conditions Among Pupils in Schools for the Blind in the United States, 1939-40," *Outlook for the Blind and the Teachers Forum*, xxxvi (February 1942), pp. 16, 18.

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TABLE I

BLIND ENROLLMENT AND GENERAL ENROLLMENT BY REGIONS					
Region	Blind Enrollment 1938	General Enrollment 1938	Rate of Blind Enrollment per 100,000 General Enrollment	Population Age 5 to 19 Years 1940	Per Cent of Population Age 5 to 19 Years Enrolled
New England	346	1,813,419	19.1	2,079,978	87.2
Middle Atlantic	1,284	6,811,458	18.9	7,955,988	85.6
Southeast	1,700	6,702,846	25.3	8,813,643	76.1
Middlewest	1,473	7,441,641	19.8	8,878,319	83.8
Southwest	692	2,306,706	30.0	2,884,352	80.0
Northwest	355	1,732,096	20.5	2,030,396	85.3
Far West	372	1,854,425	20.1	2,121,404	87.4
Totals	6,222	28,662,591	21.7	34,764,080	82.4

TABLE II

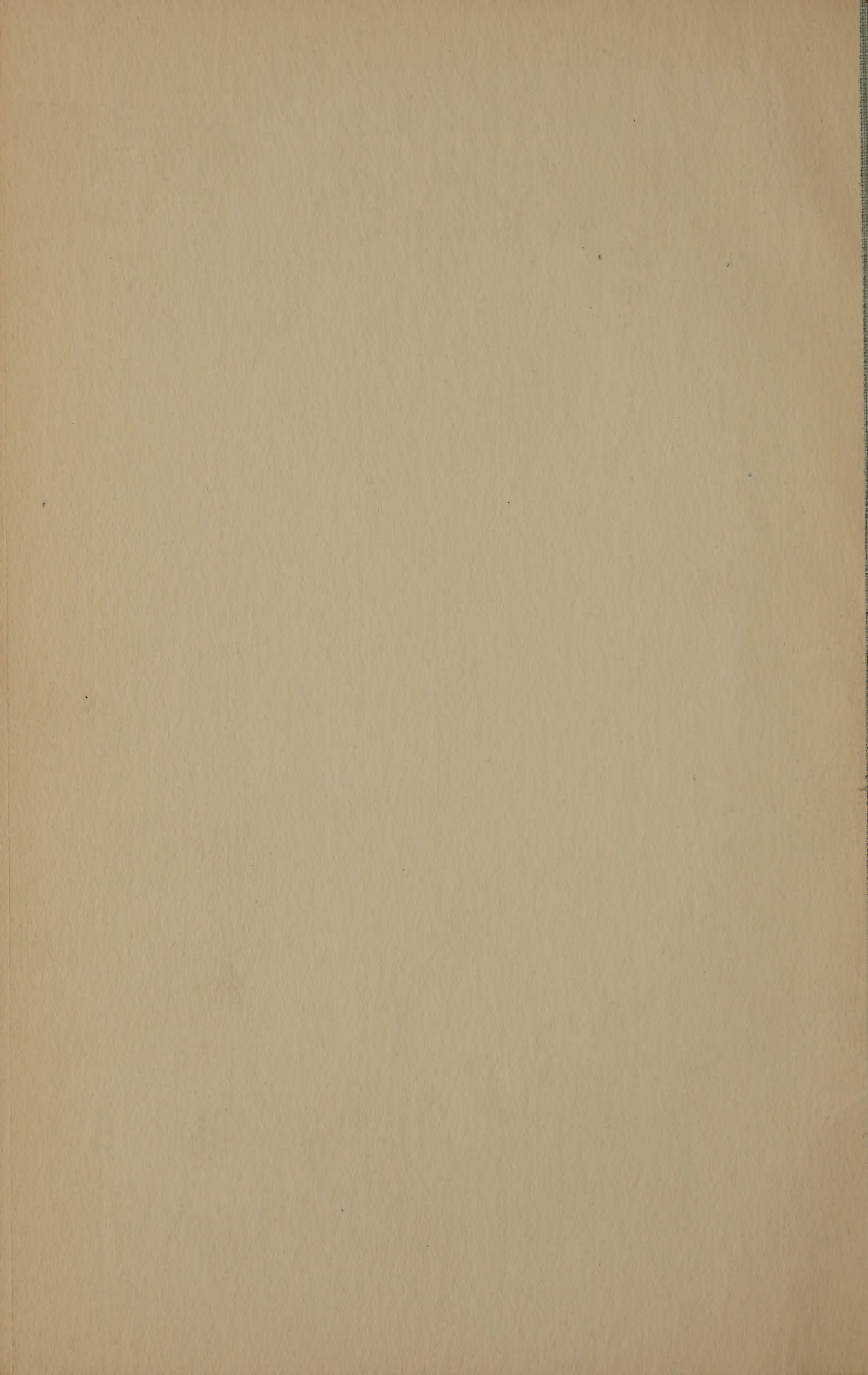
BLIND ENROLLMENT AND DISTRIBUTION BY AMOUNT OF VISION					
Region	Blind Enrollment 1938	Rate of Blind Enrollment per 100,000 General Enrollment	Distribution by Amount of Vision Better Than 20/200		
			Cases Reported	Number	Per Cent
New England	346	19.1	350	18	5.1
Middle Atlantic	1,284	18.9	1,006	76	7.6
Southeast	1,700	25.3	888	101	11.4
Middlewest	1,473	19.8	1,254	136	10.8
Southwest	692	30.0	(140)	(12)	(8.6)
Northwest	355	20.5	242	42	17.4
Far West	372	20.1	(96)	(33)	(34.4)
Totals	6,222	21.7	3,976	418	10.5

NOTE: Figures in parentheses are not representative because they are based on too small percentages.

TABLE III

ACTUAL AND "CORRECTED" BLIND ENROLLMENT BY REGIONS						
Region	Per Cent of Blind Enrollment for Which Eye Records Were Available	Per Cent of Eye Records Showing Vision Better Than 20/200	Total Blind Enrollment 1938	"Corrected" Blind Enrollment	Rate of Blind Enrollment per 100,000 General Enrollment Actual	Rate of Blind Enrollment per 100,000 General Enrollment "Corrected"
New England	100.0	5.1	346	328	19.1	18.1
Middle Atlantic	78.3	7.6	1,284	1,186	18.9	17.4
Southeast	52.2	11.4	1,700	1,506	25.3	22.5
Middlewest	85.1	10.8	1,473	1,314	19.8	17.7
Northwest	68.2	17.4	355	293	20.5	17.0
Total for the seven regions of the United States	63.9	10.5	6,222	5,569	21.7	19.4

NOTE: Figures for two regions, Southwest and Far West, are not included in the tabulation because eye records were available for only 20.2 and 25.8 per cent, respectively, of the blind enrollment; figures for these two regions, however, are included in the total.



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